incubating said inoculated hybrid panel in said device at said predetermined temperature for a first predetermined time;

reading said wells for determining said microorganism's identity at said first predetermined time by directing a fluorescent light source through said wells for determining said microorganism's identity and collecting resulting fluorescent signals;

converting said fluorescent signals into [artificial fluorescent units (AFUs)] digital output and recording said [AFUs] digital output;

analyzing said [AFUs] digital output using a database to establish said microorganism's identity and retaining said identity;

reading said wells for determining said microorganism's susceptibility at at least one second predetermined time by transmitting a visible light source through said wells for determining said microorganism's susceptibility to at least one antimicrobial agent, collecting said resulting visible light signals and converting said visible light signals into a turbidity reading;

analyzing said turbidity reading according to the algorithm depicted in Figure 1;

determining said susceptibility to at least one antimicrobial agent as directed by the algorithms depicted in Figure 1;

retaining said parallel determination of said antimicrobial susceptibility and

said microorganism's identity such that said antimicrobial sensitivity and microorganism's identity can be rapidly reported.

44.   (previously amended) The method according to claim 43 wherein said sample comprises a substantially pure culture of microorganisms suspended in inoculum water.

45.   (previously amended) The method according to claim 44 wherein said inoculum water consists essentially of purified water and a detergent.

46.   (previously amended) The method according to claim 43 wherein said sample comprises a substantially pure culture of microorganisms suspended in inoculum water.

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47.   (previously amended) The method according to claim 43 wherein said reading said wells for determining said microorganism's susceptibility is done manually.

48.   (previously amended) The method according to claim 43 wherein said reading said wells for determining said microorganism's susceptibility is done instrumentally in an automated system.

49.   (previously amended) The method according to claim 43 wherein said converting said visible light signals into a turbidity reading is done using a microprocessor.

50.   (previously amended) The method according to claim 43 wherein said converting of said fluorescent signals into AFUs and recording said AFUs is done using a microprocessor.

51.   (currently amended) The method according to claim 43 [retaining of] wherein said parallel determinations of said antimicrobial sensitivity and said microorganism's identity is performed using a [microporicessor] microprocessor.

52.   (previously presented) The method according to claim 43 wherein said incubating step, reading steps, converting steps, analyzing steps, determining step and retaining steps are done using an automated system.

53.   (withdrawn) A rapid method for eliminating false susceptible minimum inhibitory concentrations (MIC) results for beta-lactam positive microorganisms comprising:

preparing a test sample, said test sample comprising a standardized suspension of a viable beta lactam positive microorganism dispersed in a medium;

preparing a negative control sample, said negative control sample comprising said medium without a viable beta lactam positive microorganism dispersed in said medium;

adding a volume of said test sample to a plurality of drug wells, said drug wells containing at least one diluted antimicrobial agent, to form a plurality of inoculated test wells;

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adding a volume of said test sample to at least one control well, said control well having no antimicrobial agent present, to form an inoculated growth control well;

adding a volume of negative control sample to at least one said control well to form an inoculated negative control well;

mixing said inoculated drug wells, said inoculated growth control well and inoculated negative control well; wherein said inoculated drug wells, said inoculated growth control well and inoculated negative control well collectively form an MIC test plate having antimicrobial susceptibility test (AST) wells;

incubating said MIC test plate at a temperature for a first predetermined interval;

determining the absorbance for each of said AST wells at the end of said first predetermined interval;

further incubating said MIC test plate at said temperature for at least one second predetermined interval;

determining the absorbance value for each of said AST wells at the end of said at least one second predetermined interval;

calculating a susceptibility index (SI) for each of drug well and growth control well using said absorbance values;

determining the ratio of said growth control well SI to said drug well SI to establish the MIC of said beta-lactam positive microorganism to said drug;

54.   (withdrawn) The method according to claim 53 wherein said method for eliminating false susceptible MIC results for beta-lactam positive microorganisms further comprises using the algorithm in Figure 1.

55.   (withdrawn) The method according to claim 53 wherein said SI is calculated using the equation $(Df - Cf)/Di\text{-}Ci$ where Df equals a second turbidity reading for each drug well, Cf equals a second turbidity reading for each growth control well, Di equals a first turbidity reading for each drug well, and Ci equals a first turbidity reading for each growth control well.

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56.   (withdrawn) The method according to claim 53 wherein said ratio of growth control well SI to said drug well SI is close to 1 where the microorganism is truly resistant to a beta-lactam antibiotic.

57.   (withdrawn) The method according to claim 53 wherein said ratio of growth control well SI to said drug well SI is greater than or equal to 3 where the microorganism is truly sensitive to a beta-lactam antibiotic.

58.   (withdrawn) The method according to claim 53 wherein said microorganism is gram positive.

59.   (withdrawn) The method according to claim 53 wherein said microorganism is gram negative.

60.   (currently amended) A method for the rapid determination of a microorganism's identity and susceptibility to an antimicrobial agent comprising:

preparing a sample to be tested;

inoculating a hybrid panel having a plurality of wells with said sample, wherein said hybrid panel comprises a modified clear plastic microtiter plate having wells, said wells having clear bottoms and clear side walls for rapidly determining said microorganism's identity using fluorescence in parallel with wells for rapidly determining said microorganism's susceptibility to at least one antimicrobial agent;

placing said inoculated hybrid panel into a device that maintains said inoculated hybrid panels at a predetermined temperature for a predetermined time;

incubating said inoculated hybrid panel in said device at said predetermined temperature for a first predetermined time;

reading said wells for determining said microorganism's identity at said first predetermined time by directing a fluorescent light source through said wells for determining said microorganism's identity and collecting resulting fluorescent signals;

converting said fluorescent signals into [artificial fluorescent units (AFUs)] digital output and recording said [AFUs] digital output;

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analyzing said [AFUs] <u>digital output</u> using a database to establish said microorganism's identity and retaining said identity;

reading said wells for determining said microorganism's susceptibility at at least one second predetermined time by transmitting a visible light source through said wells for determining said microorganism's susceptibility to at least one antimicrobial agent, collecting said resulting visible light signals and converting said visible light signals into a turbidity reading;

analyzing said turbidity reading;

determining said susceptibility to at least one antimicrobial agent;

retaining said parallel determination of said antimicrobial susceptibility and said microorganism's identity such that said antimicrobial sensitivity and microorganism's identity can be rapidly reported.